



UNITED FIREFIGHTERS of LOS ANGELES CITY

Local 112 IAFF AFL-CIO-CLC

September 24, 2014

Honorable Mitch Englander
Chairman, Public Safety Committee
200 N. Spring Street
Los Angeles, CA 90012

Dear Chairman Englander:

Just two weeks ago, I was made aware of the Los Angeles Regional Interoperable Communications System (LA-RICS) plan to install Long Term Evolution (LTE) broadband communication equipment at more than 25 Los Angeles City Fire Stations and facilities. When I learned of this plan, I immediately informed Fire Chief Terrazas of our public safety concerns related to the health and safety of our Firefighters with the planned installation of these transmission towers and radio antennas being just a few yards away from our members' sleeping quarters (see attached). I received no response to this letter.

On Wednesday, October 1, the Los Angeles City Council's Public Safety Committee is scheduled to hear this item and give approval for the LA-RICS project to proceed. I am asking that this matter be continued until we are 100% certain that these communication towers will not have a negative health impact on our Firefighters, Paramedics, and the surrounding residents who live and work near facilities where tower installations are planned.

On September 18, a letter from Mayor Garcetti was transmitted to the City Council stating that the LA-RICS Authority was granted a California Environmental Quality Act (CEQA) exemption for the 231 proposed broadband sites. Full environmental clearance to begin construction on LA City sites has not even been granted yet. By waiving traditional CEQA requirements, there is an immediate red flag concern regarding this project. The fact that LA-RICS has not yet received full environmental clearance in accordance with the National Environmental Protection Act (NEPA) gives us additional reason for concern.

It's my understanding that in 2009, the Board of the Los Angeles Unified School District voted to ban cell sites on school property and increased setbacks near cell sites located near schools due to safety concerns. It's hard to understand why we have concluded that cell towers pose a risk to our children and school employees, yet LA-RICS is trying to install these same towers right next to our fire stations where our members spend more than one-third of their lives.

While I can appreciate that there is a September 2015 deadline to access federal funds for the completion of the LA-RICS project, it is inexcusable that once again our Firefighters in the field



were the last ones to know about a massive \$150 million dollar project that could jeopardize their health and safety. In fact, we were notified of the planned installations after a Firefighter in the field called to inform us that a contractor was at his fire station taking measurements for the planned project - which will be less than 10 feet away from their fire station. Nobody talked to us and we have not heard from one single expert who has told us that this project will be safe.


On behalf of more than 3,000 Firefighters, Paramedics, Dispatchers, Inspectors, and Pilots of the Los Angeles Fire Department who I am honored to represent, UFLAC will strongly oppose the use of Fire Stations as base locations for cell towers and/or antennas for the conduction of communication transmissions until a study with the highest scientific merit on health effects of exposure to low-intensity radiation is conducted and it is proven that such sites are not hazardous to the health of our members.

I am asking you to delay action on this item unless and until we can be given firm scientific evidence that proves the safety of the LA-RICS project.

I will also be sending separate communication to Chief Terrazas reiterating the position in our September 11th letter that the City must immediately cease and desist from the installation and construction of these facilities and demand that this installation be discussed as part of a meet and confer process with the United Firefighters of Los Angeles City.

Thank you for your careful consideration of this request.

Sincerely,



Frank Lima
President

FL/mr
opeiu #537
afl-cio-clc

CC: Honorable Eric Garcetti, Mayor of Los Angeles
Honorable Members of the Los Angeles City Council
Chief Ralph Terrazas, Los Angeles Fire Department
Board of Fire Commissioners
Ana Guerrero, Chief of Staff to Mayor
Dave Gillotte, President, Los Angeles County Firefighters, Local 1014
Harold Schaitberger, President, International Association of Firefighters
James Ferguson, International Association of Firefighters
Lou Paulson, President, California Professional Firefighters
Marvin Kropke, President IBEW Local 11
Brian D'Arcy, President IBEW Local 18



United Firefighters of Los Angeles City

Local 112, International Association of Fire Fighters

2014 SEP 12 AM 10:10
FIRE C.

September 11, 2014

Chief Terrazas, Fire Chief
Los Angeles Fire Department
200 North Main Street, Suite 1800
Los Angeles, California 90012

Chief Terrazas,

UFLAC has learned that the Department and City plan to install and/or allow the installation of cellular phone transmission towers or radio antennas at or near several of the work locations of our represented members.

This letter is intended to put you and the Department and City on written notice that towers and antennas such as these pose significant health and safety risks – including, but not limited to, serious injury, debilitating or fatal disease, and accidental death - to those living or working nearby.

The Department and City must immediately cease in the planning, installation preparation, installation and/or allowing the installation of any and all cellular phone transmission towers or radio antennas at or near the work locations of UFLAC's bargaining unit members and must immediately deactivate and remove them or cause them to be deactivated and removed where and if they have been installed.

Thank you for your immediate attention to this urgent health and safety matter.

Sincerely,

Frank Lima
President

FL/mr
opeiu #537
afl-cio-clc

Firefighters, Paramedics & Parents Against Cell Towers in Our Neighborhoods



[Home](#) [The Facts](#) [The Solution](#) [Research](#) [Contact Us](#)



[Contact Us](#)



Attention



The Los Angeles County Board of Supervisors and our Fire Chief have handed over **your tax dollars to government contractors** who are installing dangerous, high-power cell towers at your neighborhood fire station – close to your **homes, schools, and parks!**

These **50-70' high cell towers** – like the one in the picture in the right column – will emit radio-frequency radiation that will **expose firefighters, paramedics, and your family** to significant **health risks** every day.

This must stop! Sign the pledge below to keep our communities **safe**:

[CLICK HERE TO JOIN US BY SIGNING THE PETITION](#)



"As firefighters and paramedics, we live in these firehouses. What effect will these towers have on us? What are the risks to our neighbors? It's a no-brainer that LA County should at least have done a proper study before putting 200-foot high-power microwave antennas on top of our heads."

- Dave Gillotte, Active Duty Fire Captain
President, LA County Firefighters Local 1014





UNITED STATES
DEPARTMENT
OF LABOR



U.S. Department of Labor

Assistant Secretary for

Occupational Safety and Health

Washington, D.C. 20210

February 10, 2014

Dear Communication Tower Industry Employer:

In recent months, the communication tower industry has experienced **an alarming increase** in worker deaths. In 2013, 13 workers in the industry were killed at communication tower worksites. This is more worker deaths than in the previous two years combined. Four more workers have been killed in the first weeks of 2014.

Every single one of these tragedies was preventable.

OSHA is aware that there has been acceleration in communication tower work during the past year due to cellular infrastructure upgrades, and the Agency is concerned about the possibility of future incidents, especially when the hazardous work is done by employees of subcontractors. It is imperative that the cell tower industry take steps immediately to address this pressing issue: no worker should risk death for a paycheck.

OSHA has found that a high proportion of these incidents occurred because of a lack of fall protection: either employers are not providing appropriate fall protection to employees, or they are not ensuring that their employees use fall protection properly. As a result, communication tower climbers are falling to their deaths.

In addition to falls, workers face other hazards in the field. In the past few months, tower workers have been injured and killed by falling objects, equipment failure, and the structural collapse of towers. While these incidents are not as frequent as falls, they are very real hazards to protect against.

I am writing to remind you that it is your responsibility to prevent workers from being injured or killed while working on communication towers. All employers, especially those employers in **high-risk industries such as communication tower operations**, have a responsibility to recognize and prevent workplace hazards.

In order to safeguard employee safety and health:

U.S. Department of Labor

Occupational Safety and Health Administration
Washington, D.C. 20210



Reply to the attention of:

NOV 08 2013

MEMORANDUM FOR:

REGIONAL ADMINISTRATORS

THROUGH:

DOROTHY DOUGHERTY
Acting Deputy Assistant Secretary

FROM:

JAMES G. MADDUX, Director
Directorate of Construction

SUBJECT:

Protecting the Safety and Health of Communication Tower
Workers

In the past few months, the communication tower industry has experienced an alarming increase in the number of injuries and fatalities occurring at communication tower worksites. As of September 3, 2013, there have been a total of 14 incidents, which is more than the last two years combined. OSHA is aware that there has been an acceleration in communication tower work during the past year due to cellular infrastructure upgrades, and the Agency is concerned about the possibility of future incidents.

OSHA is addressing this sharp rise in incidents through outreach and enforcement efforts. Whenever Area Offices or Compliance Officers become aware of communication tower work being done in the area, please instruct your Compliance Officers to inspect these worksites to ensure that employers are taking responsibility for protecting their workers' safety and health.

OSHA will be tracking data gathered from investigations of incidents that occur on communication tower worksites. Compliance Officers should make sure to collect information regarding contract oversight issues, and obtain copies of any relevant contract documents. Try to identify, as far as possible, not only the name of the company performing the tower work, but the tower owner, carrier, and any other relevant parties in the contracting chain.

When workers are not using effective fall protection, the fall hazards are obvious, well known and potentially fatal. In appropriate cases, Area Directors should work closely with their Regional Solicitor to develop willful fall protection citations, including, when applicable, citations of the general duty clause.

When recording communication tower incidents in OIS, please ensure that the incident is identified using the “COMTOWER” identification code. This will enable OSHA to track incidents accurately.

Please ensure that the following information is entered into either IMIS or OIS for each incident:

- Age and sex of victim(s).
- Type of tower involved in the incident (i.e., monopole, lattice, guyed, etc.)
- Number of employees working on site at the time of the incident.
- Description of incident, including causes, if known.
- If the incident was a fall, describe the use of fall protection at the time of incident. Was fall protection not provided? Was it provided but not used? Was it used, but did it fail? What was the approximate height of the fall?
- Contract chain information: Describe the nature of the contract chain, following the chain up as far as possible, including the entity whose signal was being worked on.
- Was a base mounted drum hoist in use for hoisting personnel?

Additional information to be entered into IMIS or OIS when available:

- Weather conditions at the time of the incident.
- Additional employee information: length of employment in industry, level of training, etc.
- Ambient Radio Frequency: Was ambient RF present? Were employees wearing any measuring or warning devices to protect against ambient RF?

Finally, whenever an inspection of an incident on a communication tower worksite occurs, the National Office should be notified as soon as possible. Please contact Erin Patterson in the Directorate of Construction at Patterson.Erin@dol.gov, or 202-693-1851 with any information relating to an ongoing communication tower investigation.

Thank you for your attention to this pressing issue. If you have any questions, please contact the Directorate of Construction at 202-693-2020.

- Prior to their initial assignments, it is critical for newly hired workers to be adequately trained and monitored to ensure that safe work practices are learned and followed.
- As required under the OSH Act, when working on existing communication towers, employees must be provided with appropriate fall protection, trained to use this fall protection properly, and the use of fall protection must be consistently supervised and enforced by the employer. Fall hazards are obvious and well known, and OSHA will consider issuing willful citations, in appropriate cases, for a failure to provide and use fall protection. States with their own occupational safety and health plans may have additional requirements. A full list of State plans is available at <http://www.osha.gov/dcsp/osp/index.html>.
- During inspections, OSHA will be paying particular attention to contract oversight issues, and will obtain contracts in order to identify not only the company performing work on the tower, but the tower owner, carrier, and other responsible parties in the contracting chain.
- Contractor selection should include safety criteria and close oversight of subcontracting, if allowed at all. Simple "check the box" contract language may not provide enough information to evaluate a contractor's ability to perform the work safely.

For the sake of your employees and your business, I strongly urge you to do everything you can to prevent these needless injuries and deaths before anyone else is hurt, and before OSHA issues additional financial penalties.

OSHA has developed a web page with important information on protecting workers in communications work. It can be viewed at <http://www.osha.gov/doc/topics/communicationtower/index.html>

OSHA state consultation programs are available to assist small to medium sized companies in complying with OSHA standards. If you have further questions, please contact your local OSHA Area Office, State Plan Office, or your State Consultation office at <http://www.osha.gov/dcsp/smallbusiness/consult.html>, or by calling 1-800-321-OSHA.

Sincerely,

David Michaels, PhD, MPH

COMMITTEE ON FINANCIAL SERVICES
SUBCOMMITTEES:
CAPITAL MARKETS, INSURANCE, AND GOVERNMENT
SPONSORED ENTERPRISES
HOUSING AND COMMUNITY OPPORTUNITY

COMMITTEE ON HOMELAND SECURITY
SUBCOMMITTEES:
TRANSPORTATION SECURITY AND
INFRASTRUCTURE PROTECTION
INTELLIGENCE, INFORMATION SHARING AND
TERRORISM RISK ASSESSMENT



James A. Himes
Congress of the United States
4th District, Connecticut
January 28, 2010

WASHINGTON OFFICE:

214 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5541

DISTRICT OFFICES:

211 STATE STREET, 2ND FLOOR
BRIDGEPORT, CT 06604

888 WASHINGTON BLVD., 10TH FLOOR
STAMFORD, CT 06901

TOLL FREE: (866) 453-0328

Daniel Caruso, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Dear Chairman Caruso:

It has come to my attention that Message Center Management, Inc. (MCM) is applying to the Connecticut Siting Council to construct a cellular service tower at the historic Snow's Dairy Farm on Sport Hill Road in Easton, Connecticut.

I have received complaints about this matter from Easton constituents who have deep reservations about this matter. My constituents are concerned about the impact of the MCM cell tower on their property values, their quality of life and on Easton's historic character and vibrant and long-standing farming community. Easton residents also contend that more appropriate alternatives that would limit any impact on the residents of Easton have not been fully considered.

I also am aware that the Town of Easton has expressed its reservations about the site proposed by MCM. I understand that Easton has advised the Siting Council that the Town has a strong preference to locate the telecommunications facility on the municipal site, and believes that locating the tower on that site would have less of an environmental and visual impact on the community.

I request that these important issues and concerns raised by my constituents and by the Town of Easton be given full and fair consideration. I would greatly appreciate if you would keep my office informed of any developments related to this important matter. If you have any questions, please do not hesitate to contact my District Director, Kathleen Warner, at 866.453.0028.

Sincerely,

James A. Himes
Member of Congress

State of Connecticut

RICHARD BLUMENTHAL
ATTORNEY GENERAL



Hartford

June 23, 2009

Julie Kohler, Esquire
Cohen & Wolfe, P.C.
1115 Broad Street
Bridgeport, CT 06605

Dear Attorney Kohler:

I was disappointed to learn of T-Mobile's efforts to construct a cellular telephone tower in Greenwich near the North Mianus School.

I believe this proposed tower would be unacceptably sited in a residential neighborhood near the school, potentially jeopardizing the health of the surrounding community and students. The project raises profoundly serious and significant concerns relating to potential environmental and health and safety dangers.

Since no application has been made as yet for approval by the Connecticut Siting Council, there is more than ample opportunity -- and obligation -- to consider alternative locations. In light of these important concerns -- which are shared by other local and state officials, I ask that T-Mobile reconsider its decision.

If T-Mobile decides to make an application to the Siting Council to construct this tower, I will vigorously oppose it. I will urge that the Council consider these important objections, and follow its statutory mandate to consider alternative sites that would limit any impact on environmental resources, or on the health and safety of residents, school children and the surrounding community. I will consider additional action if necessary.

Please let me know your position within 10 days.

Thank you very much.

Sincerely,

RICHARD BLUMENTHAL

RB/pas

c: First Selectman Peter Tesei
State Representative Fred Camillo
State Senator Scott Frantz



Michael Fedele
LIEUTENANT GOVERNOR

July 7, 2009

VIA FACSIMILE 203-394-9901

Julie Kohler, Esq.
Cohen & Wolfe, P.C.
1115 Broad Street
Bridgeport, CT 06605

Re: Proposed Telecommunications Tower near North Mianus School

Dear Attorney Kohler:

It has come to my attention that T-Mobile is contemplating construction of a telecommunications tower on the property near the North Mianus School in Greenwich.

I understand the need for improved telecommunication systems in our state is without question. However, it is incumbent upon the stakeholders to make decisions regarding those improvements with the full appreciation for the balance between technology and the health and environmental concerns regarding the proximity to an elementary school and a densely populated neighborhood.

I urge T-Mobile to consider alternative sites for the proposed telecommunications tower; one that will meet the wireless service needs of the residents in the greater Greenwich area and will have nominal impact on our neighborhoods and school children.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael Fedele".

Michael Fedele

cc: Senator L. Scott Frantz
Representative Fred Camillo
First Selectman Peter Tesei

Office of the Lieutenant Governor • State Capitol - Room 304 • Hartford, CT 06106
Phone (860) 524-7384 • FAX (860) 524-7304
Web address www.state.ct.us/otlg • E-mail ltgovernor.fedele@ct.gov

The Health Argument against Cell Phones and Cell Towers

The biomedical evidence showing that the radiofrequency radiation emitted by cell phones and cell towers is harmful to health continues to grow. This document summarizes the health argument against cellular technology, whatever the benefits of that technology may be. You may wish to inform yourself about these arguments for any of several reasons:

- You use a cell phone.
- You encourage, or do not discourage, the use of cell phones by family members.
- You live in, or are contemplating moving into, a community close to a cell tower.
- Your school or college is considering permitting the installation of a cell tower on its property.
- Your community is considering permitting the installation of cellular repeaters, small-cell towers, or even full cell towers within its jurisdiction.

Below, I introduce myself, provide evidence of the harmfulness of cellular radiation, and show that government is not protecting us from harm and is unlikely to do so in the near future. That means that we must protect ourselves and our families at the individual and the community levels while working toward protective action by governments at the local, state, and Federal levels.

Who am I?

I am a retired U.S. Government career scientist (Ph.D., Applied Physics, Harvard University, 1975). During my Government career, I worked for the Executive Office of the President, the National Science Foundation, and the National Institute of Standards and Technology. For those organizations, respectively, I addressed Federal research and development program evaluation, energy policy research, and measurement development in support of the electronics and electrical-equipment industries and the biomedical research community. I currently interact with other scientists and with physicians around the world on the impact of electromagnetic fields on human health.

Evidence of harm

I present below key evidence, and associated references, that the exposure of humans to radiofrequency radiation, and specifically cellular radiation, is harmful.

In 2016 the National Toxicology Program, at the National Institutes of Health, linked cellular radiation to brain and heart tumors.

The National Toxicology Program (NTP), at the National Institutes of Health (NIH), just published the “Partial Findings” of a \$25 million multi-year study of the impact of cellular radiation on health. The U.S. Food and Drug Administration “nominated” this NTP study. The NTP indicated that this is the largest and most complex study ever conducted by the NTP.

¹ Ronald M. Powell, Ph.D., USA, email ronpowell@verizon.net, web site <https://www.scribd.com/document/291507610/>.

The NTP study exposed each of six separate groups of male rats to one of the six possible combinations of three different levels of cellular radiation and two different modulation formats. The modulation format is the method used to impress information on the cellular signal. A separate seventh group of male rats was used as a “control”, that is, for comparison, and was protected from exposure to any cellular radiation.

The NTP study found a “likely” causal relationship between exposure to cellular radiation and the occurrence of malignant brain cancer (glioma) and benign nerve tumors (schwannomas) of the heart in the male rats:

The rates of occurrence of brain glioma in the male rats ranged from 0 to 3.3 percent for the six groups exposed to radiation. The mean rate of occurrence was 2.0 percent across all six groups.²

The rates of occurrence of heart schwannoma in the male rats ranged from 1.1 to 6.6 percent for the six groups exposed to radiation. The mean rate of occurrence was 3.5 percent across all six groups.³

The seventh group of male rats, which was used as a control and which was protected from exposure to any cellular radiation, experienced no instances of brain glioma or heart schwannoma.

The NTP considered its findings so important to public health that it issued the “Partial Findings” (May 2016) prior to completing the full study. The NTP then presented those findings at an international conference (BioEM2016, June 2016) attended by 300 scientists from 41 countries. The NTP characterized the motivation for the early release of the “Partial Findings” this way:

“Given the widespread global usage of mobile communications among users of all ages, even a very small increase in the incidence of disease resulting from exposure to RFR [radiofrequency radiation] could have broad implications for public health. There is a high level of public and media interest regarding the safety of cell phone RFR and the specific results of these NTP studies.”

The NTP promised further findings from its study for publication through 2017. Included in those further findings will be test results on mice. You can learn more about this study from the following references:

Reference: NTP’s brief description of its study. National Toxicology Program: Cell Phones.
(<http://ntp.niehs.nih.gov/results/areas/cellphones/index.html>)

Reference: NTP’s published “Partial Findings” of the study. Michael Wyde, Mark Cesta, Chad Blystone, Susan Elmore, Paul Foster, Michelle Hooth, Grace Kissling, David Malarkey, Robert Sills, Matthew Stout, Nigel Walker, Kristine Witt, Mary Wolfe, and John Bucher, Report of Partial Findings from the National Toxicology Program Carcinogenesis Studies of Cell Phone Radiofrequency Radiation in Hsd: Sprague Dawley® SD rats (Whole Body Exposure), posted June 23, 2016.
(<http://biorxiv.org/content/biorxiv/early/2016/06/23/055699.full.pdf>)

Reference: Informative discussion of the NTP study. Environmental Health Trust, Frequently Asked Questions about the U.S. National Toxicology Program Radiofrequency Rodent Carcinogenicity Research Study.
(<http://ehtrust.org/science/facts-national-toxicology-program-cellphone-rat-cancer-study>)

² In the “Partial Findings” reference cited above, the mean (average) rate of occurrence for malignant glioma in male rats was determined from Table 1 as follows: $(3 + 3 + 2 + 0 + 0 + 3)/(90 + 90 + 90 + 90 + 90 + 90) = 2.0$ percent.

³ In the “Partial Findings” reference cited above, the mean (average) rate of occurrence for heart schwannoma in male rats was determined from Table 3 on page 15 as follows: $(2 + 1 + 5 + 2 + 3 + 6)/(90 + 90 + 90 + 90 + 90 + 90) = 3.5$ percent.

Reference: Announcement of the BioEM2016 presentation. Results of NIEHS' National Toxicology Program GSM/CDMA phone radiation study to be presented at BioEM2016 Meeting in Ghent, 05 June 2016 — 10 June 2016 Ghent University, Belgium.

(<http://www.alphagalileo.org/ViewItem.aspx?ItemId=164837&CultureCode=en>)

Reference: Viewgraphs presented by Michael Wyde, Ph.D., NTP study scientist, at BioEM2016 Meeting, Ghent, Belgium, June 8, 2016. NTP Toxicology and Carcinogenicity Studies of Cell Phone Radiofrequency Radiation.

(http://ntp.niehs.nih.gov/ntp/research/areas/cellphone/slides_bioem_wyde.pdf)

The NTP study reinforces the classification of radiofrequency radiation, including cellular radiation, as a possible human carcinogen, made by the International Agency for Research on Cancer of the World Health Organization in 2011.

In its “Partial Findings” the NTP noted that its study reinforces a decision made by the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO) in 2011. That decision classified radiofrequency radiation, including specifically cellular radiation, as a Group 2B carcinogen (possible carcinogen for humans). This classification was based on the increased risk of malignant brain cancer (glioma) and acoustic neuroma (a benign tumor of the auditory nerve), which is a form of schwannoma.

Reference: Announcement of the IARC classification. International Agency for Research on Cancer, IARC Classifies Radiofrequency Electromagnetic Fields as Possibly Carcinogenic To Humans, Press Release No. 208, 31 May 2011.

(http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf)

Reference: Full report on the IARC classification. IARC Monographs: Non- Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields, Volume 102, 2013.

(<http://monographs.iarc.fr/ENG/Monographs/vol102/mono102.pdf>)

The findings of the NTP study, in combination with the findings of other studies conducted since 2011, have greatly increased the likelihood that the IARC will raise its classification of radiofrequency radiation to Group 2A (probable carcinogen for humans) or even to Group 1 (known carcinogen for humans) in the near future.

In 2015, hundreds of international scientists appealed to the United Nations and the World Health Organization to warn the public about the health risks caused by electromagnetic fields (EMF), including radiofrequency radiation and, specifically, cellular radiation.

220 scientists from 41 nations have signed an international appeal, first submitted to the United Nations and to the World Health Organization in May 2015. These scientists seek improved protection of the public from harm caused by the radiation produced by many wireless sources, including "cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors" among others. Together, these scientists “have published more than 2000 research papers and studies on EMF.” They state the following:

“Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the

reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life.”

Reference: International EMF Scientist Appeal: Scientists call for Protection from Non-ionizing Electromagnetic Field Exposure, May 15, 2015 (updated April 27, 2016).

(<https://www.emfscientist.org/index.php/emf-scientist-appeal>)

Reference: International Scientists Petition U.N. to Protect Humans and Wildlife from Electromagnetic Fields and Wireless Technology.

([https://www.emfscientist.org/images/docs/International EMF Scientist Appeal Description.pdf](https://www.emfscientist.org/images/docs/International_EMF_Scientist_Appeal_Description.pdf))

In 2012 the BioInitiative Working Group published the most comprehensive of the recent analyses of the international biomedical research, showing a multitude of biological effects from exposure to radiofrequency radiation, including cellular radiation, at levels below the current exposure guidelines set by the Federal Communications Commission (FCC).

The health risks posed by the expanding use of radiofrequency radiation in wireless devices are not limited to cancer, as devastating as that consequence is. The broad range of health effects was extensively reviewed in the BioInitiative Report 2012. This 1479-page review considered about 1800 peer-reviewed biomedical research publications, most issued in the previous five years. The BioInitiative Report 2012 was prepared by an international body of 29 experts, heavy in Ph.D.s and M.D.s, from 10 countries, including the USA which contributed the greatest number of experts (10). The report concludes the following:

“The continued rollout of wireless technologies and devices puts global public health at risk from unrestricted wireless commerce unless new, and far lower exposure limits and strong precautionary warnings for their use are implemented.”

Reference: BioInitiative Working Group, Cindy Sage, M.A. and David O. Carpenter, M.D., Editors, BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation, December 31, 2012.

(<http://www.bioinitiative.org>)

The BioInitiative Report 2012 documented, in its “RF Color Charts”, examples of eight categories of biological effects that occurred at levels below the current exposure guidelines set by the FCC:

- stress proteins, heat shock proteins, and disrupted immune function
- reproduction and fertility effects
- oxidative damage, reactive ion species (ROS), DNA damage, and DNA repair failure
- disrupted calcium metabolism
- brain tumors and blood-brain barrier
- cancer (other than brain) and cell proliferation
- sleep, neuron firing rate, electroencephalogram (EEG), memory, learning, and behavior
- cardiac, heart muscle, blood-pressure, and vascular effects.

These biological effects were attributed to “Radiofrequency Radiation at Low Intensity Exposure” from “cell towers, Wi-Fi, wireless laptops, and smart meters”.

Reference: See the “RF Color Charts”, accessed from the left column of the web page below.
(<http://www.bioinitiative.org>)

The U.S. Government is not protecting us.

The radiation exposure guidelines of the FCC do not protect us because they are outdated and based on a false assumption.

The current radiation exposure guidelines of the FCC were adopted in 1996, 20 years ago. Those guidelines are based primarily on an analysis by the National Council on Radiation Protection and Measurements (NCRP) which was published in 1986, 30 years ago. That was many years before the emergence of nearly all of the digital wireless devices in use today.

“The FCC-adopted limits for Maximum Permissible Exposure (MPE) are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in 'Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,' NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, Maryland 20814....”

Reference: Federal Communications Commission, Office of Engineering & Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01 (August 1997). See the last paragraph on page 64.
(http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

Those exposure guidelines have not been substantially changed since that analysis in 1986. They are based on the *thermal assumption* that the only harm that radiofrequency radiation can cause is due to tissue heating. This thermal assumption has been thoroughly disproved since, as biological effects have been found to occur at levels of radiation below, and even far below, those that cause significant tissue heating. Such lower levels are commonly referred to as *nonthermal* levels. The result is that many authorities now consider the FCC’s current exposure guidelines as entirely outdated and much too high (that is, much too permissive) to protect the public.

The evidence disproving the thermal assumption is based on the broadened understanding of the biological effects of radiofrequency radiation made possible by thousands of peer-reviewed papers published by international biomedical scientists since 1986. The BioInitiative Report 2012 is the most recent comprehensive review of that research and provides many examples of bioeffects occurring at nonthermal radiation levels, as described above. Further, the new study by the National Toxicology Program, also described above, added to the evidence disproving the thermal assumption. That study exposed rats to levels of radiation below those that cause significant heating, and both above and below the FCC’s current exposure guidelines as well. Yet, even below the FCC’s current exposure guidelines, the male rats still developed malignant brain cancer (glioma) and benign tumors (schwannomas) of the nerves of the heart.

The shortcomings of the FCC’s exposure guidelines are described in detail in the following reference:

Reference: Outdated FCC “Safety” Standards: The Five Fallacies of the Electromagnetic Radiation Exposure Limits.
(<http://ehtrust.org/policy/fcc-safety-standards/>)

The FCC is not a credible source for exposure guidelines because it lacks health expertise and because it is too heavily influenced by the wireless industries that it is supposed to regulate.

The FCC lacks the health expertise required for developing health-related radiation exposure guidelines. Further, the FCC seems more interested in assuring compatibility among electronic systems than in assuring the compatibility of electronic systems with human, animal, and plant life. Since the exposure guidelines relate to health, it would make more sense for them to be developed by an agency with health expertise, such as the Environmental Protection Agency (EPA).

In addition, the FCC lacks the impartiality required to be a source of credible guidelines. The FCC is too heavily influenced by the wireless industries that the FCC is supposed to regulate. The FCC has acted in partnership with the wireless industries by permitting wireless radiation levels far higher than the biomedical research literature indicates are necessary to protect human health. The success of the wireless industries in capturing the FCC, the committees in the U.S. Congress that oversee the FCC, and the Executive Branch is detailed in a recent monograph from the Center for Ethics at Harvard University.

Reference: Norm Alster, *Captured Agency: How the Federal Communications Commission is Dominated by the Industries It Presumably Regulates* (2015).

<http://ethics.harvard.edu/news/new-e-books-edmond-j-safra-research-lab>

As an example of that capture, President Obama, in 2013, appointed Thomas Wheeler, as the Chairman of the FCC. At that time, Mr. Wheeler was the head of the CTIA – The Wireless Association, which is the major lobbying organization for the wireless industries. This is the infamous "revolving door".

The FCC's decision to fast-track Fifth Generation (5G) cellular technology without prior study of its health impact demonstrates the FCC's disinterest in the public health.

On July 14, 2016, the FCC adopted new rules that would promote fast-tracking the expansion of cellular service to new and higher frequencies as part of the Fifth Generation (5G) of cellular technology. This decision will open selected frequency bands above 24 gigahertz (GHz) and up to 71 GHz. At the same time, the FCC has requested comment on opening even higher frequencies, possibly above 95 GHz.

Reference: FCC Takes Steps to Facilitate Mobile Broadband and Next Generation Wireless Technologies in Spectrum above 24 GHz: New rules will enable rapid development and deployment of next generation 5G technologies and services.

http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0714/DOC-340301A1.pdf

Reference: Fact Sheet: Spectrum Frontiers Rules Identify, Open Up Vast Amounts of New High-Band Spectrum for Next Generation (5G) Wireless Broadband.

http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0714/DOC-340310A1.pdf

All five commissioners of the FCC, including Chairman Wheeler, approved this expedited move to 5G. No commissioner called for evaluating the health impact before proceeding with 5G, despite the recent findings of the National Toxicology Program at NIH that cellular radiation likely causes tumors. Nor did even one commissioner expressed any interest in, or concern about, the impact of this new technology on public health. Rather, the FCC's emphasis was on the billions of dollars to be made by proceeding to implement 5G as rapidly as possible, with a minimum of regulatory interference, to assure an international competitive position.

In contrast to the FCC's disinterest in the impact of 5G on the public health, extensive written comments from individual members of the public and from many interested organizations raised a host of health concerns that were totally ignored in the FCC's presentations.

Reference: July 2016 Open Commission Meeting addressing "Spectrum Frontiers" and "Advancing Technology Transitions".

(<https://www.fcc.gov/news-events/events/2016/07/july-2016-open-commission-meeting>)

Reference: The FCC Approves 5G Millimeter Wave Spectrum Frontiers. Includes excerpts from selected comments provided to the FCC by individuals and organizations that expressed concern about the health impact of the FCC's plan for 5G.

(<http://ehtrust.org/policy/fcc-approves-5g-millimeter-wave-spectrum-frontiers/>)

Reference: Comments on FCC Docket 14-177, Spectrum Bands above 24 GHz. All of the comments submitted to the FCC about the key docket leading to the implementation of 5G.

(https://www.fcc.gov/ecfs/search/filings?proceedings_name=14-177&sort=date_disseminated,DESC)

U.S. Government agencies, and U.S. medical organizations, have disputed the validity of the FCC's exposure guidelines.

U.S. Government agencies, as well as U.S. medical organizations, have disputed the validity of the FCC's thermal exposure guidelines, maintaining that they are outdated and need to be updated to provide adequate protection of human beings, including children and seniors as well as other vulnerable groups.

U.S. Environmental Protection Agency

The Environmental Protection Agency (EPA) would be a better agency than the FCC to entrust with setting radiofrequency radiation exposure guidelines because the EPA has both health expertise and environmental responsibilities. The EPA is often cited by the FCC, and by the wireless industries, as one of the agencies that the FCC has *consulted* about the FCC's exposure guidelines, as if to increase the credibility of those guidelines. However, the fact that the EPA has *explicitly disputed* the validity of those guidelines is consistently omitted from those citations.

Specifically, in 2002, the EPA addressed the limitations of the thermal exposure guidelines of the FCC, and the similar guidelines of private organizations, including the Institute of Electrical and Electronics Engineers and the International Commission on Non-Ionizing Radiation Protection:

"The FCC's current exposure guidelines, as well as those of the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-ionizing Radiation Protection, are thermally based, and do not apply to chronic, nonthermal exposure situations.... The FCC's exposure guideline is considered protective of effects arising from a thermal mechanism but not from all possible mechanisms. Therefore, the generalization by many that the guidelines protect human beings from harm by any or all mechanisms is not justified."

"Federal health and safety agencies have not yet developed policies concerning possible risk from long-term, nonthermal exposures. When developing exposure standards for other physical agents such as toxic substances, health risk uncertainties, with emphasis given to sensitive populations, are often considered. Incorporating information on exposure scenarios involving repeated short

duration/nonthermal exposures that may continue over very long periods of time (years), with an exposed population that includes children, the elderly, and people with various debilitating physical and medical conditions, could be beneficial in delineating appropriate protective exposure guidelines.”

Reference: Letters from Frank Marcinowski, Director, Radiation Protection Division, EPA, and Norbert Hankin, Center for Science and Risk Assessment, Radiation Protection Division, EPA, to Janet Newton, President, the EMR Network, with copies to the FCC and the IEEE, dated July 16, 2002.
(http://www.emrpolicy.org/litigation/case_law/docs/noi_epa_response.pdf)

In summary, the EPA makes the following points: (1) the FCC’s thermal exposure guidelines do *not* protect against all harm, only the harm caused by too much heating; (2) the FCC’s thermal exposure guidelines do *not* apply to “chronic, nonthermal exposure”, which is the type of exposure generated by cell towers and many other wireless devices; and (3) when new FCC guidelines are developed for chronic nonthermal exposures, they must accommodate “children, the elderly, and people with various debilitating physical and medical conditions” because those groups are not accommodated now.

U.S. Food and Drug Administration

The Food and Drug Administration (FDA) is also often cited by the FCC, and by the wireless industries, as one of the agencies that the FCC has consulted. But the FDA is the agency that “nominated” the NTP study of the possible health effects of cellular radiation, in part because of the FDA’s uncertainty about the validity of the FCC’s exposure guidelines:

“Currently cellular phones and other wireless communication devices are required to meet the radio frequency radiation (RFR) exposure guidelines of the Federal Communications Commission (FCC), which were most recently revised in August 1996. The existing exposure guidelines are based on protection from acute injury from thermal effects of RFR exposure, and may not be protective against any non-thermal effects of chronic exposures.”

Reference: Nominations from FDA’s Center for Devices and Radiological Health: Radio Frequency Radiation Emissions of Wireless Communication Devices, February 8, 2000.
(http://www.goaegis.com/fda_letter0200.html)

The FDA’s wisdom in nominating the NTP study was well justified by NTP’s publication of the “Partial Findings” described above. Those findings demonstrated both that the FCC’s exposure guidelines are not protective and that the thermal assumption on which those guidelines are based is invalid.

U.S. Department of the Interior

In 2014 the Department of the Interior (Fish and Wildlife Service) also addressed the limitations of the FCC’s thermal exposure guidelines. The Department of the Interior was motivated by the multiple adverse effects of electromagnetic radiation on the health, and the life, of birds, particularly in connection with cell towers. The Department of the Interior stated the following:

“However, the electromagnetic radiation standards used by the Federal Communications Commission (FCC) continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today.”

Reference: Letter from Willie R. Taylor, Director, Office of Environmental Policy and Compliance, Office of the Secretary, United States Department of the Interior, to Mr. Eli Veenendaal, National Telecommunications and Information Administration, U.S. Department of Commerce, dated February 7, 2014.

(https://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf)

American Academy of Environmental Medicine

The American Academy of Environmental Medicine (AAEM), which trains physicians in preparation for Board Certification in Environmental Medicine, states the following:

“The AAEM strongly supports the use of wired Internet connections, and encourages avoidance of radiofrequency such as from WiFi, cellular and mobile phones and towers, and ‘smart meters’.”

"The peer reviewed, scientific literature demonstrates the correlation between RF [radiofrequency] exposure and neurological, cardiac, and pulmonary disease as well as reproductive and developmental disorders, immune dysfunction, cancer and other health conditions. The evidence is irrefutable."

“To install WiFi in schools plus public spaces risks a widespread public health hazard that the medical system is not yet prepared to address.”

Reference: American Academy of Environmental Medicine, Wireless Radiofrequency Radiation in Schools, November 14, 2013.

(<http://www.aaemonline.org/pdf/WiredSchools.pdf>)

American Academy of Pediatrics

The American Academy of Pediatrics (AAP), whose 60,000 doctors care for our children, supports the development of more restrictive standards for radiofrequency radiation exposure in order to better protect the public, particularly the children. In a letter to the Federal Communications Commission (FCC) and the Food and Drug Administration (FDA), dated August 29, 2013, the AAP states the following:

“Children are not little adults and are disproportionately impacted by all environmental exposures, including cell phone radiation. Current FCC standards do not account for the unique vulnerability and use patterns specific to pregnant women and children. It is essential that any new standard for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded throughout their lifetimes.”

Reference: American Academy of Pediatrics, letter dated August 29, 2013 addressed to The Honorable Mignon L. Clyburn, Acting Commissioner, Federal Communications Commission and The Honorable Dr. Margaret A. Hamburg, Commissioner, U.S. Food and Drug Administration.

(<http://apps.fcc.gov/ecfs/document/view?id=7520941318>)

The Telecommunications Act of 1996, in combination with the FCC's exposure guidelines, empowers the wireless industries to mandate the exposure of the public to levels of radiofrequency radiation already found harmful to health.

The Telecommunications Act of 1996 bars state and local governments from objecting to the placement of cell towers on environmental/health grounds unless the FCC's exposure guidelines would be exceeded. Specifically, the Act provides the following:

“No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's [FCC's] regulations concerning such emissions.”

Reference: Telecommunications Act of 1996, Section 704 Facilities Siting; Radio Frequency Emission Standards, page 117.

<http://transition.fcc.gov/Reports/tcom1996.pdf>

This Act, in combination with the FCC's permissive exposure guidelines, strips state and local governments of the right to protect their own residents from levels of radiofrequency radiation already shown to be harmful to health. In effect, this Act transfers to the wireless industries the right to **mandate** the exposure of the public, including those most vulnerable to harm, to radiofrequency radiation without the need for further governmental action. State and local governments can still resist, but to do so they must confront this Act which is designed to frustrate their success. Even so, some governments do heroically resist and some do succeed.

Protecting ourselves and our families

We can act on our own to protect ourselves and our families, but only partially.

Instead of increasing our exposure to cellular radiation, and to the radiation from other digital wireless devices, we can decrease our exposure and improve our chances for good health. Desirable steps in this direction include the following:

- Reduce or stop the use of cell phones. Reserve them for emergencies or other essential uses.
- Replace cordless telephones with corded telephones.
- Establish wired (Ethernet) interconnections between routers and the wireless devices that the routers support. Then turn off the wireless capabilities, such as Wi-Fi and Bluetooth, of them all.
- “Opt out” of the wireless smart meter on your residence, if your state or local electric power company permits. Many states, but not all, have an opt-out provision.
- Alert family members about the health risks posed by wireless devices, particularly for vulnerable groups such as pregnant mothers, unborn children, young and teenage children, adult males of reproductive age, seniors, the disabled, and anyone with a chronic health condition. Everyone is vulnerable, but these groups are more so.

Reference: For more information on reducing radiation at home, please see Ronald M. Powell, Ph.D., How to Reduce the Electromagnetic Radiation in Your Home, which is document (10) on the list.

<https://www.scribd.com/document/291507610/>

We can obtain better protection if we work in concert.

We can contribute our efforts to the hundreds of new organizations that are emerging nationwide to raise awareness about the health risks posed by the radiation exposure from wireless devices in homes, in the workplace, in schools, and in public places, especially where children are present. Through the Internet, look for organizations that address the intersection of health with cell phones, cordless phones, Wi-Fi, smart meters, and wireless desktop computers, laptops, and tablets. These wireless devices are the principal sources of radiofrequency radiation in the home.

Take care for our children. Today's adults grew up in an environment with much less radiofrequency radiation than exists today. Today's children are not so lucky. To have the same chance at a healthy life, they need a lot of help. Unfortunately, the levels of radiofrequency radiation in our environment are rising exponentially as governments and wireless industries continue to promote, and even mandate, the exposure of the public to ever higher levels of radiofrequency radiation, with no limit in sight. That means that many of our children will become chronically ill, and many will die, while still young adults. This is a tragedy in the making. To stop it will require greatly increased awareness of the problem and serious political action at multiple levels of government. That is no small task, but we all can help. We can join with others to become a part of the solution for ourselves and our families, but especially for our children and our grandchildren.

FOR IMMEDIATE RELEASE

Contact:

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INTERNATIONAL ASSOCIATION OF FIREFIGHTERS (IAFF) VOTES TO STUDY HEALTH EFFECTS OF CELL TOWERS ON FIRE STATIONS

Call for Moratorium on New Cell Towers on Fire Stations Until Health Effects Can Be Studied

Boston, MA – August 24, 2004 – Firefighters returned to their home stations throughout the United States and Canada following last week's IAFF convention after passing a resolution to study the health effects of cell towers placed on the fire stations where they work and live.

Added to the resolution was an amendment calling for the IAFF to support a moratorium on the placement of new cell towers on fire stations until the completion of the study.

In many parts of the U.S. and Canada, the wireless industry has sought to place cell towers on fire stations because of their strategic locations. Fire stations tend to be located in densely populated areas, many of them near main highways, making them attractive locations for cell towers to maximize coverage. The wireless industry is not alone in the benefits of placing cell towers on these stations. Municipalities receive revenue from the wireless companies in exchange for locating the antennas on fire station property.

Lt. Ron Cronin of the Brookline, MA Fire Department and Acting Lt. Joe Foster of the Vancouver Fire Department and Vice President of Vancouver, B.C. Local #18 spearheaded the passage of the resolution.

"Some firefighters with cell towers currently located on their stations are experiencing symptoms that put our first responders at risk. It is important to be sure we understand what effects these towers may have on the firefighters living in these stations," Cronin explained. "If the jakes in the fire house are suffering from headaches, can't respond quickly and their ability to make decisions is clouded by a sort of brain fog, then entire communities they are protecting will clearly be at risk. No one wants the guys responding to their family emergency to be functioning at anything less than 100 percent capacity."

A recent pilot study of six California firefighters, first publicly revealed at the IAFF convention by medical writer and study organizer Susan Foster Ambrose of San Diego, CA, raises concern about the safety of fire fighters working and sleeping in stations with towers.

The study, conducted by Dr. Gunnar Heuser of Agoura Hills, CA, focused on neurological symptoms of six firefighters who had been working for up to five years in stations with cell towers. Those symptoms included slowed reaction time, lack of focus, lack of impulse control, severe headaches, anesthesia-like sleep, sleep deprivation, depression, and tremors.

Dr. Heuser, along with Dr. J. Michael Uszler of Santa Monica, CA, used functional brain scans - SPECT scans - to assess any changes in the brains of the six firefighters as compared to healthy brains of men of the same age. Computerized psychological testing known as TOVA was used to study reaction time, impulse control, and attention span.

Disturbingly, the SPECT scans revealed a pattern of abnormal change which was concentrated over a wider area than would normally be seen in brains of individuals exposed to toxic inhalation, as might be expected from fighting fires. Dr. Heuser indicated the only plausible explanation at this time would be RF radiation exposure. Additionally, the TOVA testing revealed among the six firefighters delayed reaction time, lack of impulse control, and difficulty in maintaining mental focus.

Because of increasing complaints among firefighters with cellular antennas on their stations coupled with the California study showing damage among the six firefighters tested, a group of five individuals spread across two provinces and three states worked with Southern California firefighters to draft the resolution put before the IAFF membership last week. Lt. Ron Cronin and Acting Lt. Joe Foster were joined by Dr. Magda Havas of Trent University in Peterborough, Ontario, Vermont-based Janet Newton - president of the EMR Policy Institute, and Susan Foster Ambrose.

"It is imperative to understand that in spite of the build out of an extensive wireless infrastructure in the U.S. and Canada," explained Ambrose, "we have no safety standards for cell towers. There are only regulatory standards, not proven safety standards. The Heuser Study in California calls into question whether or not we are sacrificing the health and well being of our countries' first responders for the convenience of a technology we've come to rely upon."

Considering approximately 80 percent of the firefighters attending last week's convention voted in favor of a medical study with the spirit of a cell tower moratorium attached, it appears firefighters throughout the U.S. and Canada share that concern.

This study has far-reaching public health implications in view of the fact that the wireless industry pays local governments to place cell towers, not only on fire stations, but also on top of schools and municipal buildings.

For more information contact:

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November 19, 2015

The Honorable Thomas Wheeler
Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Regarding:

Proposed Changes to the Commission's Rules Regarding Human Exposure to
Radiofrequency Electromagnetic Fields.

Dear Mr. Chairman:

The Mechanical Contractors Association of America (MCAA) is a non-profit construction trade association representing more than 2,500 firms involved in the mechanical construction and service industry nationwide and overseas. These firms employ more than 270,000 union workers.

This letter follows MCAA's August 16, 2014 letter to you regarding the potential for mechanical service technicians to be overexposed to radio frequency radiation while performing work on heating, ventilation, and air conditioning equipment on building rooftops. The association is concerned that mechanical service technicians may at times be unwittingly overexposed to radiofrequency (RF) radiation because their employers are rarely informed about the presence of and the potential hazards associated with telecommunications antennas.

MCAA respectfully requests that the commission consider adding language to its final rule, based on the following bullet points, to help protect affected workers from overexposure to RF radiation.

- When one or more RF transmitting antennas are present on a building rooftop the affected FCC licensee(s) should be required to generate and provide brief, user friendly *RF Radiation Exposure Summary Reports* to all affected building owners, building managers, and building management companies. Each completed form should include:
 - the number of telecommunications antennas their company has installed on the rooftop;
 - the type(s) of antenna, i.e. microwave, cellular, FM broadcast, satellite, portable radio, etc.;

- precisely where each antenna is located;
 - whether any of their antennas are "stealth antennas", and if so, how they can be identified;
 - how much RF radiation is generated from the antenna or antennas (exposure level ranges);
 - what direction, or directions the RF radiation is emitted; and
 - the minimum safe work distance from the antenna or antennas when the RF field is projected across the rooftop where workers could be exposed.
- All affected building owners, building managers, and building management companies should be required to inform all of their affected contractors and subcontractors about the presence of RF transmitting antennas, and provide them with a copy of the *RF Radiation Exposure Summary Reports*.

MCAA thanks you in advance for considering these recommendations. Please feel free to contact me if you have any questions, or if you need further assistance.

Sincerely,



Peter G. Chaney, MS, CSP
Director of Safety and Health



Electromagnetic fields stress living cells

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Received 30 January 2009; accepted 30 January 2009

Abstract

Electromagnetic fields (EMF), in both ELF (extremely low frequency) and radio frequency (RF) ranges, activate the cellular stress response, a protective mechanism that induces the expression of stress response genes, e.g., HSP70, and increased levels of stress proteins, e.g., hsp70. The 20 different stress protein families are evolutionarily conserved and act as ‘chaperones’ in the cell when they ‘help’ repair and refold damaged proteins and transport them across cell membranes. Induction of the stress response involves activation of DNA, and despite the large difference in energy between ELF and RF, the same cellular pathways respond in both frequency ranges. Specific DNA sequences on the promoter of the HSP70 stress gene are responsive to EMF, and studies with model biochemical systems suggest that EMF could interact directly with electrons in DNA. While low energy EMF interacts with DNA to induce the stress response, increasing EMF energy in the RF range can lead to breaks in DNA strands. It is clear that in order to protect living cells, EMF safety limits must be changed from the current thermal standard, based on energy, to one based on biological responses that occur long before the threshold for thermal changes.

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Keywords: DNA; Biosynthesis; Electromagnetic fields; ELF; RF

1. Electromagnetic fields (EMF) alter protein synthesis

Until recently, genetic information stored in DNA was considered essentially invulnerable to change as it was passed on from parent to progeny. Mutations, such as those caused by cosmic radiation at the most energetic end of the EM spectrum, were thought to be relatively infrequent. The model of gene regulation was believed to be that the negatively charged DNA was tightly wrapped up in the nucleus with positively charged histones, and that most genes were ‘turned off’ most of the time. Of course, different regions of the DNA code are being read more or less all the time to replenish essential

proteins that have broken down and those needed during cell division.

New insights into the structure and function of DNA have resulted from numerous, well-done laboratory studies. The demonstration that EMF induces gene expression and the synthesis of specific proteins [1,2] generated considerable controversy from power companies, government agencies, physicists, and most recently, cell phone companies. Physicists have insisted that the reported results were not possible because there was not enough energy in the power frequency range (ELF) to activate DNA. They were thinking solely of mechanical interaction with a large molecule and not of the large hydration energy tied up in protein and DNA structures that could be released by small changes in charge [3]. Of the biologists who accepted such results [4], most thought that the EMF interaction originated at, and was amplified by, the cell membrane and not with DNA.

It is now generally accepted that weak EMF in the power frequency range can activate DNA to synthesize proteins. An EMF reactive sequence in the DNA has been identified [5] and shown to be transferable to other gene promoters [6]. This DNA sequence acts as an EMF sensitive antenna

Abbreviations: EMF, electromagnetic fields; Hz, hertz; ELF, extremely low frequency; RF, radio frequency; MAPK, mitogen activated protein kinase; ERK1/2, extracellular signal regulated kinase; JNK, c-Jun-terminal kinase p38MAPK; SAPK, stress activated protein kinase; NADH, nicotinamide adenine dinucleotide dehydrogenase; ROS, reactive oxygen species.

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Fall from a Telecommunications Tower

U.S. Department of Labor Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

INCIDENT SUMMARY

Incident type: Fall
Weather conditions/Time of day: Clear, warm, 70°F
Type of operation: Telecommunications tower construction
Size of work crew: 4
Worksite inspection conducted: Yes
Competent safety monitoring on site: Yes
Safety and health program in effect: Yes
Training and education for workers: Inadequate
Occupation of deceased worker: Tower climber
Age/Sex of deceased worker: 55/M
Time on job: Over 10 years
Time at task: 3 days
Time employed/classification (FT/PT/Temporary): Not Available
Language spoken: Not Available
Union/Non-Union: Not Available

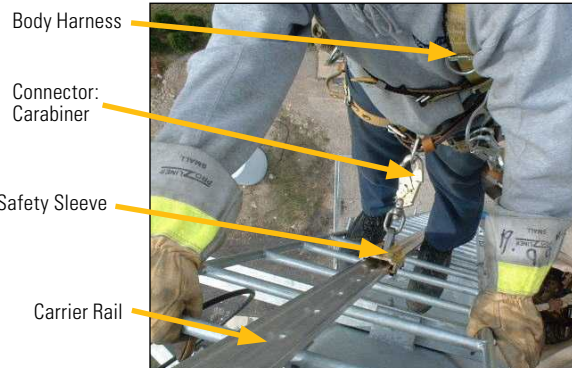


Figure 1: Components (parts) of a ladder safety device [fall protection equipment].

(Illustrates correct navel D-ring to safety sleeve connection for this specific device.)

BRIEF DESCRIPTION OF INCIDENT

A worker was climbing down a 400-foot telecommunications tower when he lost his footing. The *ladder safety device or system* (consisting of the carabiner, carrier rail, safety sleeve and body harness) he used failed to arrest his fall. The safety sleeve did not activate correctly to stop the worker's fall, the chest D-ring ripped out of the body harness, and he plunged 90 feet to his death.

Likely Causes of Incident

- The worker did not receive proper training on the ladder safety device he used.
- The pawl of the sleeve was defective. The defect prevented the device from activating properly to stop a fall within 2 feet (.61 meters) of its occurrence (29 CFR 1926.1053(a)(22)(iii)). This was identified in a safety notice issued after the incident and as a result of OSHA's investigation.
- The weight of the worker, his tools and equipment was more than the 310-pound rating of the body harness.
- The safety sleeve was connected to the harness at the chest D-ring instead of to the navel D-ring as specified by the manufacturer of the ladder safety device.
- The body harness was not a component of the manufacturer's ladder safety device.

You Have a Voice in the Workplace

The *Occupational Safety and Health Act of 1970* affords workers the right to a safe workplace (see OSHA's **Worker Rights** page, www.osha.gov/workers.html). Workers also have the right to file a complaint with OSHA if they believe that there are either violations of OSHA standards or serious workplace hazards.

How OSHA Can Help

For questions or to get information or advice, to report an emergency, report a fatality or catastrophe, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov or call our toll-free number at 1-800-321-OSHA (6742), TTY 1-877-889-5627. It's confidential.

More Information

OSHA standards and regulations:

www.osha.gov/law-regs.html

OSHA publications:

www.osha.gov/publications

OSHA-approved state plans:

www.osha.gov/dcsp/osp

OSHA's free On-site

Consultation services:

www.osha.gov/consultation

Training resources:

www.osha.gov/dte

Compliance Assistance services:

www.osha.gov/complianceassistance



INCIDENT PREVENTION

- Ensure that workers who climb telecommunications towers to perform construction activities are protected from falls. For example, workers can use ladder safety devices meeting the criteria of [29 CFR 1926.1053\(a\)\(22\)](#) or personal fall arrest systems (PFAS) meeting the criteria of [29 CFR 1926.502\(d\)](#). A PFAS is used to arrest a worker in a fall from a *working level*. It consists of an anchorage, connectors, and a body harness, and may include a lanyard, a deceleration device, a lifeline, or a suitable combination thereof.
- Train workers to safely erect, use, maintain and disassemble the ladder safety device ([29 CFR 1926.1060](#)) or the PFAS ([29 CFR 1926.503](#)), before they begin working. Training should include how to identify hazards, inspect the equipment and cover all fall protection equipment needed for the job. For example, train employees on how to safely use positioning devices ([29 CFR 1926.502\(e\)](#)) when working on an elevated vertical surface.
- Never use defective equipment. Inspect ladder safety devices and PFAS ([29 CFR 1926.502\(d\)\(21\)](#)) for visible defects or damage, such as parts that are not working properly, wear, broken stitches or bad buckles—before each use, after any incident that could cause damage and as recommended by the manufacturer. Remove from service fall protection equipment *activated during a fall* and make sure that it is inspected by a *competent person* ([29 CFR 1926.32\(f\)](#)) and determined to be *undamaged* before using it again ([29 CFR 1926.502\(d\)\(19\)](#)). Inspect ladders for visible defects on a periodic basis, and after any incidents that could affect their use ([29 CFR 1926.1053\(b\)\(15\)](#)).
- Research the product's safety history before purchase. Register the equipment with the manufacturer to receive safety notices and recalls. In this case, the manufacturer issued a safety notice after the incident, instructing users to tie off to a shock absorbing lanyard, in addition to using the ladder safety device.
- Do not exceed the manufacturer's load rating for the ladder safety device and its components. Overloading the device can cause it to fail. Include the weight of the worker and any tools or equipment he or she may be carrying in the load calculation. Fixed ladder safety devices and related support systems used in the construction industry must be capable of withstanding a drop test consisting of an 18-inch drop of a 500-pound weight ([29 CFR 1926.1053\(a\)\(22\)\(i\)](#)).
- Connect the safety sleeve to the correct D-ring on the body harness as specified by the manufacturer (Figure 1). This varies with different manufacturers (for example, navel or chest D-ring). Incorrectly connecting the parts can prevent the equipment from working properly and hinder movement up and down the ladder.
- Ensure that the individual components (Figure 1) of the ladder safety device can be used together (are compatible). Components that are not designed to work together can lead to serious injuries or death. Employers must provide the right fall protection equipment for the job ([29 CFR 1926.1051\(b\)](#); [29 CFR 1926.501](#)).

Note: The described case was selected as being representative of improper work practices which likely contributed to a fatality from an incident. The incident prevention recommendations do not necessarily reflect the outcome of any legal aspects of this case. OSHA encourages your company or organization to duplicate and share this information.

This Fatal Facts is not an OSHA standard or regulation and it creates no new legal obligations. The recommendations contained herein are advisory in nature and are intended to assist employers in providing safe and healthful workplaces. The Occupational Safety and Health Act of 1970 (OSH Act) requires employers to comply with safety and health standards promulgated by OSHA or by an OSHA-approved state plan. The requirements of OSHA-approved state plans can be reviewed by selecting the state's website at: www.osha.gov/dcsp/osp. The OSH Act's General Duty Clause, Section 5(a)(1), requires employers to provide employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

